

ISO 3864 Part 2 - The New International Standard for Product Safety Labeling

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HCS' commitment is to supply our customers with safety labels that meet the most current standards and to provide guidance and information to help our customers make informed decisions. To this end, this document describes the use of a new standard for international product safety labels.

In November 2004, ISO will publish a new standard, *ISO 3864-2 Graphical symbols – Safety colours and safety signs – Part 2: Design principles for product safety labels*. As Chairman of the U.S. Technical Advisory Group (TAG) to ISO/TC 145 (the ISO committee in charge of the primary international standards related to safety signs, symbols, and colors), I have been actively involved in the development of the ISO 3864 standard. The following is a description of this standard and what it means for product manufacturers in practical terms.

A Brief History

In 1998 the ISO subcommittee in charge of the ISO 3864 standard recognized the need to divide the standard into parts; one for safety signs in the workplace and public areas, and another part for product safety labels. Product safety labels typically need to convey more information than usually appears on typical sign hanging in the workplace or in public areas.

As the chair for the U.S. TAG to ISO/TC 145 and as a member of the ANSI Z535 committee, I was asked to write the draft version of ISO 3864-2 for product safety labels. The goal, from the U.S. TAG's perspective, was to write a standard that would incorporate existing formats currently defined in both ISO product-specific standards and in the *ANSI Z535.4 Product Safety Sign and Label* standard. For five years a collaborative effort was undertaken to find common ground by the many nations involved in ISO/TC 145 (currently 15 countries are participant members on this committee). The final draft of ISO 3864-2 went to ballot this

year, passed and, is currently at the ISO Central Secretariat and is expected to be published before the end of November 2004.

ISO 3864-2 Format Options

According to the new international standard for product safety labels, ISO 3864-2: 2004, a product safety label is defined as follows:

“3.9 product safety label

label on a product that informs the observer of one or more potential hazards and describes the safety precautions and/or actions required to avoid the hazard(s)”

Several formats are described that convey both the hazard description and hazard avoidance information necessary for use on product safety labels.

Format Option 1: The use of symbol-only formats as defined by ISO 3864-1 – Typically two or more symbol labels are used in order to convey both items of content (hazard description/hazard avoidance). See Figure 1.



Figure 1 – Warning sign, prohibition sign and mandatory action sign

Format Option 2: The use of symbols with supplementary text. – Here text can be used to communicate a complex message or to reinforce the symbol’s meaning.

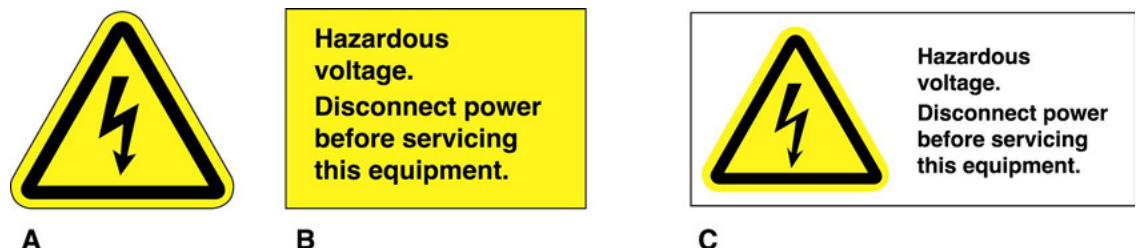


Figure 2 – Example A & B: safety sign with separate supplementary text sign,
Example C: safety sign with supplementary text

Format Option 3: The use of symbols with text and the addition of the “hazard severity panel.” – Here the hazard severity panel is used to convey the level of risk associated with the hazard.



Figure 3 – Example a product safety label using a hazard severity panel

A new “Harmonized” Format

The first two options described above have been in use at least since the publication of the first version of ISO 3864 in 1984. The remainder of this paper is devoted to the significance of format option 3: Product safety labels with a hazard severity panel.

Similar to the ANSI Z535.4 standard, the ISO 3864-2 standard defines the hazard severity panel as follows:

“3.7

hazard severity panel

area of a combination or multiple product safety label that communicates the category of risk associated with a hazard

NOTE: This panel contains the general warning sign, a signal word and the corresponding background colour”



The yellow safety alert symbol incorporated in these hazard severity panels is the general warning sign W001 specified in ISO 7010.

Figure 4 –Hazard severity panels

ISO 3864-2 incorporates the same DANGER, WARNING, CAUTION three-tier signal word system for identifying levels of hazard seriousness (“risk” in the ISO vocabulary). The same use of color is associated with the background panels for each of the three signal words; red for DANGER, orange for WARNING, and yellow for CAUTION.

Concerning harmonization of safety labels between ANSI and ISO, the addition of nearly identical definitions for the signal words and the use of these signal words in safety label formats represents a significant achievement.

The Yellow Safety Alert Symbol

As defined in the ANSI Z535 standards, you know that the safety alert symbol is used in the signal word panel to indicate the potential risk of personal injury. In the 1991 to 2002 versions of the ANSI Z535 standards, this symbol is always shown as a triangle that is the contrast color of the signal word panel’s background color, and the exclamation mark is the same color as the panel’s background color. Refer to the left side of Figure 5. This is the way we have produced ANSI Z535-compliant safety labels for years.



Figure 5 –Harmonized formats for safety labels, new safety alert symbol versions on right

In ISO 3864, the triangle with an exclamation mark is defined as the “General Warning Sign” and it is this sign that indicates the risk of personal injury. The symbol must be accompanied by other text or other symbols to convey a safety message (i.e. it is too abstract on its own to communicate specific safety information). When it came time to illustrate the use of signal words for product safety labels, the ISO nations involved in the writing of ISO 3864-2 insisted that the triangle-with-exclamation-mark symbol appearing in the severity level panel must be identical to the ISO 3864-1 general warning sign. It makes sense for several key reasons.

- At the international standardization level, you should not have many symbols for the same meaning.
- The combination of a specific color with a surround shape is key to the ISO vocabulary of safety symbols. Yellow is always used for the triangular shaped warning signs as defined by ISO 3864-1.
- A family of standards, such as ISO 3864-1 and ISO 3864-2, should not contradict themselves by having differences in their key concepts, in this case, the format and color of a specific symbol cited in ISO 3864-1
- ISO 7010 (the collection document for standardized safety symbols) includes the general warning sign and ISO 3864-2 does not differ from its proscribed symbol.

ANSI Z535 and Harmonization With ISO

At the September 2004 meeting of the ANSI Z535 Committee in Baltimore, my revision proposals for harmonization with ISO were positively received and passed by committee members present. The next step for all revision proposals is public comment and official committee ballot, due to take place during the first quarter of 2005. The Z535 standards are slated for publication of their revisions in 2006.

One of the key proposals for harmonization that was positively received at the 2004 Z535 meeting was to include the option to use the yellow general warning sign in place of the current safety alert symbols in the signal word panel. The illustrations shown in the *ANSI Z535.3 Criteria for Safety Symbols* and in the *ANSI Z535.4 Product Safety Sign and Label* standards will be updated to show the optional use of both general warning symbols (one with yellow border, one without yellow border) as is shown in Figure 6. The significance of this change is that, as of 2006 publication of the ANSI Z535 standards, both ISO and ANSI will have format options that are identical in every respect.



Figure 6 – Safety alert symbol options to be included in the ANSI Z535 2006 standards (soon to be balloted)

What This Means for HCS and Our Customers

For the past nine years, my company, Hazard Communication Systems, has developed and printed for its customers thousands of labels that utilize our “harmonized” format. This format, as shown on the left side of Figure 5, utilized an ISO symbol in the symbol panel of an ANSI Z535.4 safety label. The ISO symbol made this format usable for an international audience (and the text would often be translated into the country where the product was going). The ANSI format conformed in every respect to the ANSI standards, which never in any version ever objected to the use of ISO formatting for symbols. Now we are at a turning point in safety labeling formats. My company has made the decision to change all of its harmonized labels to the new international format that utilizes the yellow safety alert symbol. Although such a design approach is not yet in the ANSI Z535 standards, all indications are that it will be soon. The simple fact is that this format is the one prescribed by ISO 3864-2 and as such, all safety labels using a “hazard severity panel” **must** have this symbol as this standard defines. Thus, in the interest of our customers to have a safety label format that is accepted internationally, our decision to revise our “harmonized” labels in this fashion is the right choice.

Note that all standards mentioned in this paper are available from Global Engineering Documents: 800-854-7179. The electronic version of 3864-2 should be available in late October 2004 with the printed version available in November 2004.